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School of Geographical Sciences and Urban Planning
Arizona State University

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Dear Arizona Corporation Commissioners and Commission Staff:

Thank you for the invitation to provide input on the important matter of utility disconnection rules. We appreciate your engagement with academic researchers and our colleagues in public health, the National Weather Service, and other organizations with relevant expertise to make an informed decision that balances the diverse interests of Arizonans who may be impacted by disconnection rules. This letter addresses the proposed disconnection regulation based on the draft rules available as of March 2021. The perspectives shared here attempt to synthesize perspectives of a wide range of scholars at Arizona State University supporting research on urban heat and its societal impacts, although this letter is submitted solely on behalf of the signatories. We focus here on matters related to outdoor and indoor heat, health, and electricity disconnection, although we acknowledge there are other considerations about low temperatures, water services, and other aspects of disconnection that we are not directly addressing.

Arizona represents one of the world's best and most scrutinized testbeds for understanding how people and society cope with extreme heat and rising global temperatures. Headlines in national media outlets frequently portray the future of Arizona as a bleak one: unsustainable, perilous, uninhabitable, extreme. Such narratives are damaging to the reputation of our state and its people and economy, and the Corporation Commission is well-positioned to contribute to a more positive narrative about Arizona's future by implementing policy that is protective both of public health and fair economic growth. We urge the Commission to be attentive its role in setting a model that other jurisdictions around the world may emulate as they look to a warmer future. In short, we see the Commission's policy on utility disconnection as a critical inflection point for the state. As noted above, there is a wide range of expertise available at Arizona State University, and the state's other public research institutions, that can help the Commission continue to explore, develop, and evaluate policies related to utility disconnections. We are hopeful for an ongoing relationship with the Commission and other key stakeholders on this matter, and we recognize its importance as well as the dynamic nature of the systems and risks involved.

Summer heat in Arizona is a serious public health risk. Each year in Arizona, hundreds of people die because of exposure to high temperatures, and thousands require medical care for heat-related illnesses. These impacts are of great economic and social consequence. Although we recognize that economic costs are not sufficient to capture the value of human life, they are one way to describe the scope of the problem. The loss of life from heat-related deaths in Maricopa County in 2020 alone is between $0.54B and $2.7B using federal agency valuations; heat-related illnesses reach approximately $56M in healthcare expenditures for Maricopa County residents in 2018. Social surveys conducted by Arizona State University researchers and other public institutions across the country consistently find that heat poses widespread consequences to the health and quality of life of residents in warm regions of the state; 36% of Phoenix residents reported experiencing heat-related illness during the summer in one survey and 27% of Maricopa County residents reported frequently feeling too hot inside their homes in another.

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At deliberative public forums about heat preparedness conducted by ASU in 2017, approximately 80% of participants prioritized keeping the power grid operating during extreme heat. While these forums did not explicitly address utility disconnects, participants argued that the power grid was protecting well-being because it was one of the most effective ways to stay cool. Participants' emphasis on access to A/C to keep people safe underscores a broadly held concern for actions that keep the power on during high temperatures. These data all suggest that for many people served by the Commission, heat is not merely an inconvenience or nuisance. It is a serious obstacle and detriment to day-to-day health and productivity, and in the absence of appropriate protections, fatal. Effective disconnection rules can be part of the solution to this serious—and worsening—situation.

There are extensive public health and meteorological data resources submitted to the docket by our colleagues that we anticipate will serve as useful decision support resources. Analysis we have completed has also been previously submitted, including our estimates of the percentage of indoor heat-related deaths in Maricopa County that occur on days with different maximum air temperatures as measured at Sky Harbor airport:

- Approximately 50% of indoor heat-related deaths occur on days with maximum temperatures of 107ºF or below
- Approximately 25% of indoor heat-related deaths occur on days with maximum temperatures of 104ºF or below
- Approximately 10% of indoor heat-related deaths occur on days with maximum temperatures of 99ºF or below
- Approximately 5% of indoor heat-related deaths occur on days with maximum temperatures of 97ºF or below
- The lowest maximum air temperature observed on a day with a recorded heat-related death in Maricopa County is 83ºF

It is clear from our analysis of these data that there is no single obvious threshold above which indoor heat-related deaths are considerably reduced. Unless the commission were to adopt a rule that prevented disconnections on any day with temperatures in the low 80s or above (which would account for much the year in the warmer parts of the state), the Commissioners will ultimately be balancing immediate heat-related public health risks against other considerations. Simply put, it is sufficiently warm in many parts of Arizona during much of the year that electricity disconnection and subsequent loss of air conditioning can create fatally hot conditions inside residences, especially for those who are more physiologically vulnerable or live in inadequately insulated housing such as mobile homes. Research by our ASU colleague Dr. David Sailor indicates that homes in Arizona can reach health-threatening temperatures in as little as 6.5 hours after power is lost in the summer months.

We see the decision related to disconnection rules as one of tradeoffs, but we have not heard the Commission or staff clearly articulate what these tradeoffs are. **Articulating the goal(s) of an effective disconnection policy would be a useful undertaking for the Commission and staff.** From public presentations, we understand some of the competing interests to be:

- Ratepayer debt accumulation (and associated consequences to health and well-being), utility revenue disruption, and utility staff burden, all of which would be supportive of less stringent disconnection rules
- Indoor heat deaths, indoor heat illness, indoor comfort, ratepayer anxiety, ratepayer burden, and customer satisfaction, all of which would be supportive of more stringent disconnection rules
- Internal and external perceptions, equity, and burdens to related organizations, which may support more or less stringent disconnection rules from various points of view

Unless the Commission is able to articulate the extent to which it values these and other factors relative to one another, it is not clear to us that any data or analysis will productively contribute to effective rulemaking. In terms of avoiding heat-related illnesses and deaths that are immediately linked to utility disconnections, disconnection rules should be as stringent as possible—but clearly these immediate heat-health impacts are not the only consideration. We and our colleagues stand ready to support the Commission with additional research to further evaluate and iterate disconnection rules in the years ahead.

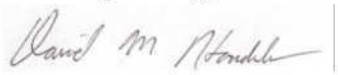
We also recognize that the Commission is attempting to create disconnection policy in an information-scarce environment. Critically, **we do not have a comprehensive understanding of the extent to which heat-related illnesses and deaths, as well as other health outcomes, are related to utility disconnections** outside of cases that have received attention in public media. Currently, we only become aware of cases where utility disconnections are directly linked to heat deaths through media reporting, efforts from advocates, and/or inconsistent details available from death records. Compared to our state's national and international leadership in heat-health surveillance programs, we do not currently have the information available to fully understand or address the relationship of disconnections and heat-related illnesses and deaths. **We recommend that the commission implement additional reporting requirements** in which utilities and health departments securely share records of individuals who have their utilities disconnected and those who suffer heat-related illness or death, which will allow a more precise count of the number of individuals whose heat illness or death may be a consequence of utility disconnection. We are fully confident that sufficiently secure data sharing mechanisms exist to enable this process and recognize that there are legal and liability concerns that would need to be addressed to permit this critical sharing of data.

Finally, we request that the Commission include in its thinking, to the best extent possible, the customer experience as part of this rulemaking process. Draft rules include an option for disconnections to be suspended on days in which the *forecast* weather conditions meet certain criteria. While we understand the philosophy behind this approach, we anticipate that it could be particularly problematic to implement and challenging for customers to understand. Our experience suggests that many customers are not monitoring daily weather forecasts that change and improve as the forecast date gets closer. Combining the changing weather forecast with advance notification requirements from the utility seems to be a recipe for significant confusion on the part of consumers. What if a day is originally forecast to exceed a temperature threshold and a utility issues notification suspending disconnections, but then the forecast is revised to below the threshold? Or vice versa? What if a customer uses a mobile phone app to monitor the

weather forecast that draws data from a different source than the Commission is using for its own decision making? These are important questions to explore, which ideally would be investigated via interviews and focus groups with customers who are at risk of disconnection. ASU and its partner institutions would be eager to contribute to build knowledge in this domain. **At present, we anticipate that setting disconnection rules based on calendar dates, rather than weather forecasts, would be a significantly more manageable experience for customers.** We can imagine benefits of supplementing a calendar period for disconnection suspensions with additional provisions to suspend disconnections on any days on which the National Weather Service issues an Excessive Heat Warning, which would be rare occurrences outside of the proposed date window.

We appreciate your attention to these considerations and for the opportunity to contribute to the rulemaking process for utility disconnections. We understand the urgency to implement effective rules in the immediate future, but also hope that our engagement on this topic can continue in the years ahead to more comprehensively understand the scale of the challenges that we are addressing, the impact of particular policy choices, and ultimately find a solution that best balances the many relevant interests for the people of Arizona.

Most respectfully,



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